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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,858	06/20/2001	Hirokazu Sakaguchi	9319S-000226	4104
27572	7590	12/23/2003	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C.			WARREN, MATTHEW E	
P.O. BOX 828			ART UNIT	
BLOOMFIELD HILLS, MI 48303			PAPER NUMBER	

2815

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/885,858

Applicant(s)

SAKAGUCHI, HIROKAZU

Examiner

Matthew E. Warren

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 June 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5, & 7. 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Objections*

Claim 1 is objected to because of the following informalities: in line 3 of the claim, the term "to the exterior" lacks antecedent basis. Appropriate correction is required.

Claim 3 is objected to because of the following informalities: in lines 1-2 of the claim, the phrase "comprises are of an" contains grammatical or spelling errors. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Frye et al. (US 5,534,465).

In re claim 1, Frye et al. shows (figs. 2 and 4) and LCD driver IC chip comprising a pad member (34) connected to an internal semiconductor device circuit (21) (see connection via below the pad into the n+ region) and having an electrical connection region to the exterior. At least one insulating film (35) is

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formed at a peripheral portion of the pad member and around the electrical connection region. A metal layer (36) covers the pad member and the insulating film. Figure 4 shows in another view that a bump electrode (41) is provided on the metal layer, wherein the bump electrode and the pad member lie above at least part of the semiconductor device circuit with an insulating interlayer (26) provided therebetween.

In re claim 2, Frye et al. shows (figs. 2 and 4) an integrated circuit chip comprising a device circuit, a transistor (21) in the device circuit, a pad (34) positioned above the transistor and connected to the device circuit (see connection via below the pad into the n+ region). An insulating interlayer (26) is formed between the pad and the transistor. Figure 4 shows in another view that a bump electrode (41) is on the pad.

In re claims 3 and 4, Frye inherently discloses that the circuit further comprises one of an input and output circuit because if the circuit is to be connected to the flip chip (40) as shown in figure 4, then the circuit must either receive input or provide output to that flip chip. In the same sense, the pad is either an input pad or an output pad.

In re claim 5, figure 4 of Frye shows that the bump (41) is positioned above the transistor portion (21).

In re claim 6, figure 2 of Frye shows that a via interconnects the pad (34) and the device circuit. The via is the portion under the pad (34) and connected to the contact on the n+ layer of the substrate.

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In re claim 7, figure 2 of Frye shows that a lead layer (the contact layer on the n+ diffusion regions) of the insulating interlayer interconnects the via and the pad.

In re claim 8, figure 2 of Frye shows that a passivation film (35) is formed at a peripheral portion of the pad.

In re claim 9, figure 2 of Frye shows that a metal layer (36) covers the passivation film and the pad.

In re claim 10, figure 4 of Frye shows that the metal layer (36) is interposed between the pad (34) and the bump (41).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Barr et al. (US 2002/0000665 A1) and Kamata et al. (JP 60-154632 A) also show IC's having bump electrodes formed above the circuit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew E. Warren whose telephone number is (703) 305-0760. The examiner can normally be reached on Mon-Thurs, and alternating Fri, 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 308-2772. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3432.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Matthew E. Warren

*Matthew E. Warren*  
November 24, 2003